

## CLAIMS

The embodiments of the invention in which an exclusive property or right is claimed are defined as follows:

1. A sensor comprising:

5 a silicon substrate of a first conductivity type;  
a layer of silicon of a second conductivity type formed on said silicon substrate;

an insulation layer within said layer of silicon and dividing said layer of silicon into an upper layer and a lower layer;

10 a plurality of resistors formed in said upper layer of silicon and interconnected into a bridge arrangement, said bridge arrangement having an output;

means for connecting a first voltage to said bridge arrangement; and  
means for connecting a second voltage to said lower layer of silicon,  
with a value of said second voltage being selected to reduce power up drift.

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2. Sensor of claim 1 wherein said plurality of piezoresistors form a Wheatstone bridge having a top, a bottom, and a midpoint, with said first voltage being applied at said top and said bottom of said bridge and said second voltage being approximately equal to a voltage at said midpoint of said bridge.

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3. Sensor of claim 1 wherein said second voltage is determined as a function of an observed drift when said second voltage is equal to said first voltage and the observed drift when said second voltage is equal to ground.

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4. Sensor of claim 3 wherein said second voltage is determined by multiplying said

first voltage by 
$$\left( 1 - \frac{|PUD @ V_{bridge}|}{|PUD @ V_{bridge}| + |PUD @ ground|} \right)$$

wherein  $|PUD @ V_{bridge}|$  = the observed drift when said second voltage is equal to said first voltage; and  $|PUD @ ground|$  = the observed drift when said second voltage is equal to ground.

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5. Sensor of claim 1 wherein said second voltage is equal to said first voltage times the quantity of one minus the ratio of a first value of a drift with said second layer connected to said first voltage, divided by the sum of said first value and a second value of a drift with said second layer connected to ground.

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6. Sensor of claim 1 wherein said second voltage has a high state during a first period of time equal to said first voltage and a low state during a second period of time equal to ground with the ratio of said first period of time to a total cycle time equal to one minus the ratio of a first value of drift with said second voltage at a high level divided by the sum of said first value of drift plus a second value of drift with said second voltage at ground.

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7. Sensor of claim 1 further comprising a resistor voltage divider having said first voltage as an input and said second voltage as an output.

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8. A sensor comprising:

a first layer of a semiconductor material;

an insulation layer formed on said first layer;

a second layer of a semiconductor material formed on said insulation

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layer;

a plurality of resistors formed in said second layer of semiconductor material and interconnected into a bridge arrangement having an output;

means for connecting a first voltage to said bridge arrangement; and

means for connecting a second voltage to said first layer with a value of

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said second voltage being selected to reduce power up drift in said output during a period of time immediately following connection of said first voltage.

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